

OBSERVATIONS ON THE ICHNEUMON-FLY *EPIURUS*
PTEROPHORI ASHMEAD.

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The stalks of the evening primrose (*Oenothera lamarckiana*) are very commonly found infested with larvæ of the moth, *Lophoptilus eloisella*. These larvæ are borers in the pith cavity of the stalks. They hibernate in the stalks. In autumn each larva prepares itself a hibernation chamber in the stalk by setting off a section of the empty pith cavity by building two partitions of frass and silk a little further apart than the length of its own body, and by lining the chamber so formed with a thin transparent film of silk. On splitting apart the pith cavities in autumn a number of such chambers may often be found in a single stem. But in some of these chambers, instead of the yellow moth larva there is found the whitish larva of a rather large hymenopterous parasite. The rearing of this parasite was undertaken at the suggestion of Professor James G. Needham and continued under his kindly direction. It proved to be the larva of the ichneumon fly, *Epiurus pterophori*.

The evening primrose grows wild in vacant lots, and was gathered in a number of places at Ithaca, N. Y. The stalks were first brought into the laboratory and examined on March 13th. The moth larvæ were found distributed throughout the stalks, occurring very frequently. The larvæ of *Epiurus pterophori* were found to occur, seldom more than one in a stalk in a very small percentage of the stalks examined. Primrose stalks collected from certain places contained none. It is always found within a hibernation chamber but in no particular region of the stalk, and the head capsule together with other skin fragments of *Lophoptilus* have been found with it. This indicates the parasitic nature of *Epiurus pterophori*.

The larva is yellowish-white, flattened dorso-ventrally, and reposes normally in its cell in a curved position. The larvæ measure from six to seven millimeters in length and are about one millimeter in breadth. Four narrow chitinized plates are

found on the dorsal surface of the head. By these characteristics it is readily distinguished from the moth larva.

Before pupating the larva forms a silken web of loose texture within the cell of *Lophoptilus*. It is within this silken network that the pupa is formed and remains until it emerges as the imago through the stalk. The pupa is 7.5 to 8 millimeters long and 1.5 millimeters broad.

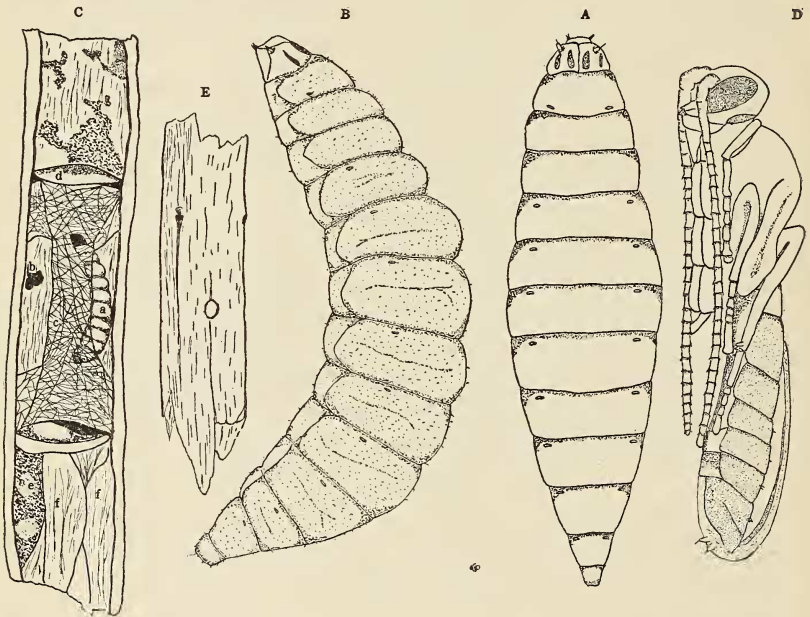


Fig 1. A, Dorsal view of larva of *Epiurus pterophori* Ashmead; B, Lateral view of larva showing normal curved position; C, Longitudinal section of stalk of *Oenothera lamarckiana* showing:— a, Larva in web of silk within cell; b, Head capsule of *Lophoptilus eloisella*; c, Silken web; d, Partition; e, Frass deposit in pith cavity of stalk; f, f, Pith cavity.

Larvæ were found in stalks collected and examined throughout March and April. The first pupa was found within the stalk March 22nd from material which had been inside the laboratory for a week. Pupæ were found to exhibit a great deal of activity; some were able to turn their bodies completely over within the cell.

The first adult was found March 29th in a stalk that had previously been slit open to show the larvæ. The insect was

left within the cell in which it was found, the upper surface of the stalk replaced, and both fastened securely together. This section of the stalk was kept under observation in a cheese-cloth covered battery jar. The adult emerged through a small round hole it had made in the stalk a few days afterward.

The adult was identified by Dr. J. Chester Bradley as *Epiurus pterophori* Ashmead. It is known also in literature as *Pimpla pterelas*, *Pimpla pterophori* Ashmead, and *Scambus pterelas*. Notes kindly given by Dr. Bradley indicate that it is "parasitic on larvæ of stem-boring and stem-gall-making Lepidoptera and Coleoptera such as *Gelechia gallæ-solidaginis*, *G. gallæ-asterella*, *Pyronota nubilalis*, and *Stagmatophora ceanothiella*. In literature it is also recorded as a parasite of *G. gallæ-asterella*, and the beetle *Mononychus vulpeculus*."

A description of the adult may be found in Walsh.

Epiurus pterophori has been mentioned as having been found feeding on the pupa of the European corn-borer.³ According to the description: "the hymenopterous larva of *Epiurus pterophori* was found feeding on the internal juices of a *P. nubilalis* pupa which had been broken open. The full-grown parasite larva spun a brown silken cocoon and pupated within the remains of its host. Only two of these parasites were bred."

Although a pale silken web was found to be spun by the parasite, it was not such that could be described as a "brown silken cocoon" as is described above.

By the first of June all of the adults had emerged. The adults were transferred to breeding cages containing evening primrose plants. Although an attempt at oviposition was noted on the part of one female against the glass wall of the battery jar, none was observed after they were placed with the evening primrose plants. No mating was observed; and no feeding, although several sorts of food were offered, first sugar and water solution, and later small insects, placed in the cages. The adults lived for but a few days, during which time they were moderately active.

Literature Cited.

- (1) J. Hamilton: Ent. News. 1894-'95, pp. 287-288.
- (2) Walsh: Trans. Acad. Sci. of St. Louis III, 1873, pp. 1, 133.
- (3) Mass. Ex. Sta. Bull. 189, p. 58, 1919.